Geographic Variation Public Use File:
Technical Supplement on Standardization

January 2013

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Rationale for Standardization Methodology

There is great interest in evaluating the resource use of Medicare services across geographic areas. The context for such evaluations includes:

- Analyses of resource use by providers or groups of providers for purposes of confidential feedback;
- Developing episodes of care to compare provider performance in delivering a bundle of acute and post acute services; and
- Broader analyses of geographic differences in Medicare spending.

If an analysis is limited to a single service, utilization measures can suffice to make comparisons. But a number of factors limit the usefulness of such measures:

- Similar services can be provided through multiple channels. For example, beneficiaries can receive post acute care services in skilled nursing facilities, long-term care hospitals, and inpatient rehabilitation facilities and through home health agencies. How can you make judgments comparing SNF days, LTCH and IRF stays and HHA visits?
- The provision of similar services by different providers or practitioners, by the same practitioner in different settings, or by the same practitioner in the same setting in one or in multiple encounters has different cost implications.

Given these issues, health care spending is often used as a proxy for utilization. But if you are trying to assess use of services, should you include adjustments made to national payment amounts to reflect variation in wage or practice costs? A similar question is raised with regard to payments to providers that support larger Medicare program goals. The process of going from actual spending to adjusted spending that can be used in making comparisons of service use is called standardization. Risk adjustment deals separately with differences in health status.

Ideally, claim pricer software could be modified to generate a standardized payment amount simultaneously with the actual payment amount. This would allow all of the same information that is used to calculate the actual payment to inform the standardized amount in the most efficient way. Until such modifications are made, however, it is necessary to standardize payment amounts after the fact working from information retained for final action claims and various schedules/worksheets associated with the various fee schedules. Given the volume of claims, the complexity of payment rules and the fact that certain information used in processing some payments is not retained on the claim as stored in the CCW, there are tradeoffs involved in developing a standardization methodology.

This standardized payment methodology:

- Eliminates adjustments made to national payment amounts to reflect differences in regional labor costs and practice expenses (measured by hospital wage indexes and geographic practice cost indexes);

- Substitutes a national amount in the case of services paid on the basis of state fee schedules.

- Eliminates payments to providers that support larger Medicare program goals, such as the payments to hospitals for graduate medical education (GME), indirect medical education (IME), and for serving a large population of poor and uninsured (i.e., disproportionate share payments(DSH));

- Maintains differences that exist in actual payments resulting from:
    - the choice of setting in which a services is provided;
    - the choice about who provides the service;
    - the choice as to whether to provide multiple services in the same encounter; and
    - differences in provider experience with regard to outlier cases.

- Treats outlier payments as a given rather than trying to determine what outlier payment would have been in a standardized world. Actual outlier payments are adjusted for differences in wages using the wage index.

- Subtracts coinsurance based on the standardized amount rather than the actual coinsurance paid. Actual coinsurance would reflect the impact of GCPI/wage adjustment. Subtracting the actual amount from a standardized allowed would reintroduce differences we are trying to exclude.

General Considerations

An indicated above, standardization is performed after the fact rather than as individual claims are processed. For this purpose final action claims from CMS's Chronic Condition Data Warehouse were used.

A limited number of claims with unknown beneficiaries according to the historic CMS Enrollment Database (EDB) were excluded. These claims were where the CCW `Bene_Id` =-1. In addition, Part A and Part B Institutional claims were restricted to claims with Actual Payment (`clm_pmt_amt`) greater than or equal to $0. Part B Non-institutional claim lines were restricted to allowed line items, determined based on `line_prcsng_ind_cd` values of "A" (Allowed), "R" (Reprocessed) or "S" (Secondary payer).

The links below provided information about individual claims field discussed in this document.

http://www.resdac.org/ddvh/index.asp

http://www.ccwdata.org/data-dictionaries/index.htm

Comments

- Impact of exclusion of claims for beneficiaries where the CCW `Bene_Id` =-1.

2010	Claims	Payments
Part A (All Year)	143	$1,086,583
Part B Non-institutional (Jan)	162	$17,615
Part B Institutional (Jan)	29	$14,927

Inpatient hospital (Acute Hospitals)

Claims included

NCH_CLM_TYPE_CD = 60, 61 and

Substr(PROVIDER_ID,3,1) = 0 (excluding cancer hospitals)

In general – the standardization method for acute hospital claims depends on whether the claim is from a Maryland hospital or from a hospital outside of Maryland. For hospitals outside of Maryland, the standardization methodology depends on whether or not a claim is for a short-stay transfer, or PAC discharge for certain MS-DRGs. Interim claims, whether in Maryland or other states, are ignored. Finally, claims with a $0 actual payment and no Medicare covered days are given a standardized payment $0.

Specifically

- Maryland hospitals are identified based on the provider ID based on the list of provider IDs supplied by the Maryland Rate-Setting Commission.
- Short-stay transfers (excluding MS-DRG 789) or PAC discharges for certain MS-DRGs are identified based on having a length of stay(LOS) + 1 that is less than the geometric mean LOS for that MS-DRG and either:
    - the discharge status code indicates a transfer or
    - the discharge status code indicates discharge to PAC and the MS-DRG is on the list of MS-DRGs covered by the discharge to PAC policy
    - The length of stay is the greater of the "claim through" date minus the "claim from" date or 1. LOS=max(clm_thru_dt-clm_from_dt,1)
        - Transfer is indicated by any of the following values in PTNT_DSCHRG_STUS_CD:
            - 02 - discharged/transferred to other short term general hospital for inpatient care
            - 66 - discharged/transferred to a Critical Access Hospital (CAH)
        - Discharge to PAC is indicated by any of the following values in PTNT_DSCHRG_STUS_CD:
            - 03 - Discharged/transferred to skilled nursing facility (SNF)
            - 05 - Discharged/ Transferred to a children's or cancer hospital
            - 06 - Discharged/transferred to home care of organized home health service organization.
            - 62 - Discharged/transferred to an inpatient rehabilitation facility including distinct parts units of a hospital

        - 63 - Discharged/transferred to a long term care hospitals
        - 65 - Discharged/Transferred to a psychiatric hospital or psychiatric distinct unit of a hospital
    - Yes/No variable created for GV data base (`post_acute_care_drg`) indicates whether MS-DRG on the claim (`CLM_DRG_CD`) is subject to the "discharge to PAC" policy based on the list of MS-DRGs in the relevant regulation.

- Interim claims were identified based on discharge status code or discharge date.

`PTNT_DSCHRG_STUS_CD` = 30 or `DSCHRG_DT` is Null

Comments

- In V.1, we used a broader list of discharge status codes to identify transfers. The list included: 02 (discharged/transferred to other short term general hospital for inpatient care); 04 (discharged/transferred to intermediate care facility (ICF)); 05 (discharged/transferred to another type of institution for inpatient care (including distinct parts) other than a psychiatric hospital or psychiatric distinct part unit of a hospital); 09 (admitted as an inpatient to hospital with OPD services within 3 days of admission); 43 (discharged/transferred to a federal hospital); 66 (discharged/transferred to a Critical Access Hospital (CAH): and 30 (still a patient). Including 30 was an unintended. After reviewing the Medicare Claims Processing Manual and consultation with CMM, we determined that we should have included only 02 and 66. In addition, claims for MS-DRG 789 will not be treated as a transfer for standardization purposes since the weight for this MS-DRG already assumes that the patient will be transferred; as a result, it is excluded from the transfer policy.
- In V.1, we used a broader list of discharge status codes to identify discharges to PAC. The list included: 03 (Discharged/transferred to skilled nursing facility (SNF)); 06 (Discharged/transferred to home care of organized home health service organization); 08 (Discharged/transferred to home under care of a home IV drug therapy provider); 50 (Hospice – home); 51 (Hospice - medical facility); 61 (Discharged/transferred within this institution to a hospital-based Medicare approved swing bed); 62 (Discharged/transferred to an inpatient rehabilitation facility including distinct parts units of a hospital); 63(Discharged/transferred to a long term care hospitals); 64 (Discharged/transferred to a nursing facility certified under Medicaid but not under Medicare); 65 (Discharged/Transferred to a psychiatric hospital or psychiatric distinct unit of a hospital); 71 (Discharged/transferred/referred to another institution for outpatient services as specified by the discharge plan of care); and 72 (Discharged/transferred/referred to this institution for outpatient services as specified by the discharge plan of care (eff. 9/01)). After reviewing the Medicare Claims Processing Manual and consultation with CMM, we determined that we should have included only 03, 06, 62, 63 and 65 from this list. In addition, we should have included 5 (Discharged/ Transferred to a children's or cancer hospital)

1) Claims from all hospitals, except those in Maryland, and excluding claims:
- **for transfers, or discharges to PAC (for certain MS-DRGs); or**
- **that are interim claims**

Description

- The standardized amount is built up from the national base payment rates for labor, non-labor and capital.
- The sum of these amounts is multiplied by the DRG weight for the discharge. For claims without an MS_DRG the CAH formula (described below) is applied.
- Any DRG outlier payments from the claim are added to this amount after adjusting for differences in wages using the wage index applicable to the hospital. The weight applied to the hospital wage index is equal to the labor base rate divided by the sum labor and non-labor base rates (Labor Ratio).
- In addition, any capital outlier payments from the claim are added to this amount after adjusting for differences in wages using the wage index applicable to the hospital. The entire amount is adjusted by the geographic adjustment factor (wage index raised to the power of .6848).
- Any payment for new technology is taken without adjustment.
- The base rates, the DRG schedule and the IPPS wage index crosswalk used depend on the fiscal year of the claim.
- Deductible and coinsurance amounts are then subtracted.

Formula

$$Standard\ payment = (Labor\ Base + Nonlabor\ Base + Capital\ Base) x DRG\ Weight$$

$$+ \frac{DRG\ Outlier\ Payment}{(Labor\ Ratio x Wage\ Index) + Nonlabor\ Ratio} + \frac{Capital\ Outlier\ Payment}{Wage\ Index^{.6848}}$$

$$+ New\ Tech\ Payment - Deductible - Coinsurance$$

Sources

- national labor base rate, national non-labor base rate, national capital base rate taken from the relevant year's regulation.
- DRG weight (`DRG_WGT`) is determined by looking up the weight from the relevant year's regulation for the MS-DRG number listed on the claim (`CLM_DRG_CD`).
- DRG Outlier payment from the claim is `NCH_DRG_OUTLIER_APRV_PMT_AMT`.
- Capital Outlier payment from the claim is `CLAIMS_PPS_CAPITAL_OUTLIER_AMOUNT`.
- New technology payments appear in the `CLAIM_VALUE_AMOUNT` when "77" is in `CLAIM_VALUE_CODE`.

- Wage index is determined by looking up the post reclassification wage index from the relevant year's regulation for the provider ID on the claim (PROVIDER_ID). Default value is 1.0.
- Deductible and coinsurance from the claim are NCH_BENE_IP_DDCTBL_AMT and NCH_BENE_PTA_COINSRNC_LBLTY_AMT
- Medicare covered days are from CLM_UTLZTN_DAY_CNT

Comments

- An alternative approach to outliers was used in V.0 of standardization. Under this approach, the national geometric mean of actual outlier payments was determined by MS-DRG. This amount was then added on to all claims for the same MS-DRG. This approach would have been acceptable if there wasn't variation across HRRs in outlier payments. Based on finding such variation, we decided to add a wage adjusted actual outlier payment to the standardized base amount. Since V.1, we gained additional information about outlier payments and how there may also be a capital outlier payment, so we will now be capturing this amount. We had also been adjusting the DRG outlier payment for wage differences as if it included the capital payment, we have modified this adjustment. Capital outliers are adjusted by the geographic adjustment factor.
- In previous versions of standardization, we had not been capturing payments for certain new technologies. This was a result of not understanding that they appear in a discreet field on the claim. We will be picking up these payments in V.2.
- By building up the payments amount, we are able to leave out all IME, GME and DSH. A reasonable question is whether it is appropriate/fair to remove all of IME payments.
- GME is paid through a pass through field which also includes organ procurement costs and bad debt. There is no easy way to parse out from this field the payments that we would want to include from those that we would want to exclude. An additional complication is that these payments are made on an interim basis with a settlement when the cost report is settled, so it would be difficult to capture the adjustments made at that time.
- We do not include the additional payments provided to sole community hospitals or Medicare dependent hospitals. These facilities either receive the greater of the IPPS payment or a hospital specific rate or some portion of the amount by which their hospital specific rate exceeds the IPPS payment. We are effectively removing possible additional payments by treating them the same as IPPS hospitals. One could argue that this is consistent with excluding other "policy" payments (e.g., IME). This has the effect of holding rural areas harmless for the additional payments made to maintain access in rural areas.

2) Claims for transfers, or discharges to PAC (for certain MS-DRGs), for non-Maryland hospitals

Description

The standardized amount is the lesser of the normal payment described above or a per diem amount that is built up and excludes IME, DSH, GME and adjustment for labor differences.

- For transfer between hospitals, the per diem is equal to the normal MS-DRG payment divided by the geometric length of stay (GLOS) for that MS-DRG. The hospital receives twice the per diem on day 1 and the per diem on subsequent days, up to the normal MS-DRG amount.
- The per diem is the same for most PAC transfers; but for certain MS-DRGs, the hospital receives an amount that varies based on length of stay but which is heavily frontloaded for expenses on day 1.
- For claims without an MS_DRG the CAH formula (described below) is applied.

Formula

For transfers and most PAC discharges

$$Standard\ payment = the\ lesser\ of$$

$$(Labor\ Base + Nonlabor\ Base + Capital\ Base) x DRG\ Weight$$

$$or$$

$$\frac{(Labor\ Base + Nonlabor\ Base + Capital\ Base) x DRG\ Weight}{GMLOS} \times (LOS\ + 1)$$

plus

$$\frac{DRG\ Outlier\ Payment}{(Labor\ Ratio\ x\ Wage\ Index) + Nonlabor\ Ratio} + \frac{Capital\ Outlier\ Payment}{Wage\ Index^{.6848}}$$

$$+New\ Tech\ Payment - Deductible - Coinsurance$$

For the PAC discharges for "Special Pay MS-DRGs"

$$Standard\ payment = the\ lesser\ of$$

$$(Labor\ Base + Nonlabor\ Base + Capital\ Base) x\ DRG\ Weight$$

or

$$(Labor\ Base + Nonlabor\ Base + Capital\ Base) x\ DRG\ Weight x.5\ x$$

$$(1 + \frac{\text{LOS} + 1}{\text{GMLOS}})$$

plus

$$\frac{DRG\ Outlier\ Payment}{(Labor\ Ratio\ x\ Wage\ Index) + Nonlabor\ Ratio} + \frac{Capital\ Outlier\ Payment}{Wage\ Index^{.6848}}$$

$$+New\ Tech\ Payment - Deductible - Coinsurance$$

Sources

- national labor base rate, national non-labor base rate, national capital base rate taken from the relevant year's regulation.
- DRG weight (DRG_WGT) is determined by looking up the weight from the relevant year's regulation for the MS-DRG number listed on the claim (CLM_DRG_CD).
- Length of stay is max(clm_thru_dt-clm_from_dt,1)
- The GMLOS for each MS-DRG comes from a table for the relevant year
- DRG Outlier payment from the claim is NCH_DRG_OUTLIER_APRV_PMT_AMT.
- Capital Outlier payment from the claim is CLAIMS_PPS_CAPITAL_OUTLIER_AMOUNT.
- New technology payments appear in the CLAIM_VALUE_AMOUNT when "77" is in CLAIM_VALUE_CODE.
- Wage index is determined by looking up the post reclassification wage index from the relevant year's regulation for the provider ID on the claim (PROVIDER_ID). Default value is1.0.
- Deductible and coinsurance from the claim are NCH_BENE_IP_DDCTBL_AMT and NCH_BENE_PTA_COINSRNC_LBLTY_AMT
- Medicare covered days are from CLM_UTLZTN_DAY_CNT

Comments

- In our initial attempt at standardization (V.0), we had treated transfers as if they were full stays which would overstate standardized amounts. As a result, in our second version, we started with the actual payment made for transfers which we adjusted to remove the impact of the wage index. Subsequently, we determined that this approach left in IME and DSH payments. This led to the current approach.

3) Claims from Maryland hospitals

Description

The standardized amount is derived by applying a year-specific, hospital-specific factor to the actual paid claims amount. The factors were developed based on data supplied from Maryland's Health Services Cost Review Commission and are designed to remove MD's equivalent of IME/DSH spending from the state's hospital payments for both inpatient and outpatient services. The Labor Ratio used to adjust the wage index is equal to the IPPS labor base rate plus capital base rate divided by the sum labor, non-labor and capital base rates.

Formula

$$Standardized\ payment = \frac{(\text{Actual payment X hospital specific factor}) + \text{deductible} + \text{coinsurance}}{(\text{Labor Ratio x Wage Index}) + \text{Nonlabor Ratio}} - Deductible - Coinsurance$$

Sources

- Actual payment amount is CLM_PMT_AMT.
- Hospital-specific factors supplied by PDAG based on data from Maryland's Health Services Cost Review Commission
- Deductible and coinsurance from the claim are NCH_BENE_IP_DDCTBL_AMT and NCH_BENE_PTA_COINSRNC_LBLTY_AMT
- Wage index is determined by looking up the post reclassification wage index from the relevant year's regulation for the provider ID on the claim (PROVIDER_ID). Default value is 1.0.
- Medicare covered days are from CLM_UTLZTN_DAY_CNT

Comments

- We initially treated Maryland hospitals the same as IPPS hospitals. Given that Maryland had its own system, we felt that this approach was not appropriate. In V.1, we took the approach of just taking the paid claim amount adjusted for wage difference as the standardized amount. In public data releases, we made note of the fact that these standardized amounts included MD's equivalent of certain social payments (IME, GME and DSH). Subsequently, working with Maryland's Health Services Cost Review Commission, we developed a series of year-specific, hospital-specific factors that would back out MD's equivalent of IME/DSH spending from the state's hospital payments for both inpatient and outpatient services.

4) Interim claims

Description

- For these claims the standardized amount is null (e.g., ".").

Formula

Standardized payment = Null

Comments

- In V.1 of standardization, we ignore the dollars on interim claims (discharge status code of 30 or null discharge date) for all hospitals excluding those in Maryland. In 2008, there were 6,653 interim claims out of 11,494,547; of which, 5,120 were for MD hospitals. According

to Maryland's Health Services Cost Review Commission, we should not be including these claims.

Critical Access Hospitals - Inpatient Services

Claims included

NCH_CLM_TYPE_CD = 60, 61 and Substr (PROVIDER_ID,3,2) = 13

Description

The standardized amount starts with the actual payment amount on the claim and adds back in any deductible & coinsurance. This total is then adjusted for differences in area wages. Any deductible & coinsurance are then removed from this amount. Finally, claims with a $0 actual payment and no Medicare covered days are given a standardized payment $0.

Formula

$$Standardized\ payment = \frac{Actual\ payment + Deductible + Coinsurance}{(Labor\ Ratio\ x\ Wage\ Index) + Nonlabor\ Ratio} - Deductible - Coinsurance$$

Sources

- Actual payment amount is CLM_PMT_AMT.
- Labor ratio is IPPS Labor Base rate / (IPPS Labor Base Rate + IPPS Non-Labor Base Rate)
- Nonlabor ratio is 1- Labor ratio
- Deductible and coinsurance from the claim are NCH_BENE_IP_DDCTBL_AMT and NCH_BENE_PTA_COINSRNC_LBLTY_AMT
- Wage index is determined based on PROVIDER_ID. The first two digits of the provider ID are used to identify the provider's state. Then, the state rural wage index from the SNF crosswalk on CMS website is determined. If this couldn't be determined, the wage index was set at 1.0.
- Medicare covered days are from CLM_UTLZTN_DAY_CNT

Comments

- CAHs are currently paid 101% of the actual costs. Unlike SCHs and MDHs, CAH costs are current costs rather than costs from a base period that are trended forward by a national factor. Since CAHs are paid based on costs, there is no need for a policy to provide a separate payment for outliers or to adjust payment for short stay transfers or discharges to PAC.

- In V.1 of standardization, we simply took the dollar amount from the CAH claim. There are a range of alternative approaches to CAHs.
    - Treat like PPS hospitals and build up a standardized payment based on the DRG.
        - This approach could be viewed as being consistent with how SCHs and MDHs are handled
        - This approach would create questions about how to handle transfers from CAHs. Also, since CAHs do not receive a separate payment for outliers, would this approach understate such "outliers"?
        - Would treating CAHs like PPS hospitals eliminate the type of cost distinction based on choice of type of providers that we want to maintain?
    - One could adjust the payment amount to remove the 1% above costs paid to CAH, treating it as a "social payment".
        - This approach raises the question about whether the higher payment to CAH is comparable to the IME or DSH payment. If there is a social payment here, is it only the 1% above costs?
    - In conjunction with the previous option or separate, one could adjust for wages using applicable area wage index. This would increase payments. Is it reasonable to assume that the labor portion of CAHs is the same as that for PPS hospitals?
- For this round of standardization, we chose to adjust actual CAH allowed amounts for differences in wages. We assumed that the labor share is the same as for IPPS hospitals. CMM recommended that we use IPPS Post Reclassification wage index for the wage adjustment. However, the provider numbers for CAHs do not appear on these tables. So instead, the first two digits of the provider ID were used to identify the provider's state. Then, the state rural wage index from the SNF crosswalk on CMS website was used. If this couldn't be determined, the wage index was set at 1.0.

Other Inpatient

Claims included

NCH_CLM_TYPE_CD = 60, 61 and on the list of cancers hospitals from the CMS website or otherwise not a IPPS Hospital, CAH, LTCH, IPF or IRF

Description

The standardized amount starts with the actual payment amount on the claim and adds back in any deductible & coinsurance. This total is then adjusted for differences in wages using the applicable area wage index. Any deductible & coinsurance are then removed from this amount. Finally, claims with a $0 actual payment and no Medicare covered days are given a standardized payment $0.

Formula

$$Standardized\ payment = \frac{Actual\ payment + Deductible + Coinsurance}{(Labor\ Ratio\ x\ Wage\ Index) + Nonlabor\ Ratio} - Deductible - Coinsurance$$

Sources

- Actual payment amount is CLM_PMT_AMT.
- Labor ratio is IPPS Labor Base rate / (IPPS Labor Base Rate + IPPS Non-Labor Base Rate)
- Non-labor ratio is 1- Labor ratio
- Deductible and coinsurance from the claim are NCH_BENE_IP_DDCTBL_AMT and NCH_BENE_PTA_COINSRNC_LBLTY_AMT
- Wage index is determined based on PROVIDER_ID. The CBSA of the provider is determined and the associated wage index is used from the SNF crosswalk on CMS website. If the CBSA of a provider cannot be determined, a wage index of 1.0 is assumed.
- Medicare covered days are from CLM_UTLZTN_DAY_CNT

Comments

- Under v1 of standardization, other inpatient was a residual category for providers not captured by any of the other provider selection criteria. The dollars for this category were minimal $5 -7 m. CMM told us that cancers hospital alone should account $400 m in spending. After examining the list of provider codes for cancer hospitals on the CMS website, it became apparent that these hospitals were being captured under our criteria for

acute inpatient hospitals. As a result under V.2, we will use the CMS list to identify these providers.

- We had previously taken the actual claims amount as the standardized amount. In V.2 we will adjust allowed amounts for differences in wages.
- Cancers hospitals would not be on the IPPS wage index list, so we are using the SNF wage index table to determine the index for the area.

Inpatient Psychiatric Facilities

Claims included

NCH_CLM_TYPE_CD = 60, 61 and Substr (PROVIDER_ID, 3,2) equal to 40 - 44 or Substr (PROVIDER_ID, 3,1) equal to

- 'M' – Psych unit in CAH
- 'S' – Psych unit in IPPS hospital

Description

- The standardized amount is built up from the national base payment rate multiplied by the IPF adjustment factor (equivalent of weight), the age factor, the comorbid factor and the variable per diem factor (based on LOS)
- Any outlier payments from the claim are added to this amount after adjusting for differences in wages using the wage index applicable to the hospital.
- If the claim indicates that electroconvulsive therapy was provided, the electroconvulsive therapy base amount is multiplied by electroconvulsive therapy units.
- Deductible and coinsurance amounts are then subtracted.
- Finally, claims with a $0 actual payment and no Medicare covered days are given a standardized payment $0.

Formula

$$Standardized\ payment =$$

$$(Base \times IPF\ Adjustment\ factor \times age\ factor \times comorbid\ factor \times variable\ per\ diem\ factor)$$

$$+\frac{Outlier\ Payment}{(IPF\ Labor\ Share\ x\ Wage\ Index) + (1 - IPF\ Labor\ Share)}$$

$$+(Electroconvulsive\ therapy\ base \times units)$$

$$-Deductible - Coinsurance$$

Sources

- National base payment amount, electroconvulsive therapy base amount and IPF labor share taken from the relevant year's regulation.
- IPF factor is determined by looking up the weight from the relevant year's payment calculator tool for the MS- DRG number listed on the claim (CLM_DRG_CD). For MS-DRGs without a factor, the ipf_wgt defaulted to 1.

- The age factor is determined by looking up the weight for the beneficiary's age from the relevant year's payment calculator tool. The beneficiary's age is determined by subtracting bene_DOB from clm_thru_dt on the claim.
- The comorbidity factor is determined for each comorbidity by looking up the weight associated with the diagnosis code or procedure code or combination on the relevant year's comorbidity codes worksheet. All the secondary diagnoses and procedures on the claim (DGNS_CD and PRCDR_CD) are examined.
- The variable per diem factor is determined by looking up the weight for the beneficiary's LOS from the relevant year's payment calculator tool. The beneficiary's LOS is CLM_UTLZTN_DAY_CNT
- There is a differential payment for the first day of the stay depending on whether the facility had a full service ER. We use the provider of service file to make this determination when TEMPRELF =Y.
- Outlier payment from the claim is NCH_DRG_OUTLIER_APRV_PMT_AMT.
- Wage index is determined based on PROVIDER_ID. The CBSA of the provider is determined and the associated wage index is used from the SNF crosswalk on CMS website. If the CBSA of a provider cannot be determined, a wage index of 1.0 is assumed.
- Electroconvulsive therapy units come from REV_CNTR_UNIT_CNT when PROC_CD = 94.27 and REV_CNTR = 0901.
- Deductible and coinsurance from the claim are NCH_BENE_IP_DDCTBL_AMT and NCH_BENE_PTA_COINSRNC_LBLTY_AMT
- Medicare covered days are from CLM_UTLZTN_DAY_CNT

Comments

- A teaching adjustment is not included consistent with our policy of generally excluding such adjustments.
- IPFs in rural areas receive a 17% add-on. We did not include this additional payment consistent with our not including the additional payments to Sole Community Hospitals.
- IRFs in Hawaii and Alaska receive cost of living adjustment to the non-labor portion of the base rate. We did not include this adjustment consistent with our policy of not including wage adjustments.
- There is an adjustment to the first day of the variable per diem based on whether the **hospital has** a full service ER. In V.1 of standardization, we had been applying the adjustment based on whether the **beneficiary entered** the facility through the ER. This is corrected in V.2.
- Rather than use separate schedules for IPF, IRF, LTCH and HHA, we use the SNF schedule which is closest to the underlying data. The schedule used changes on a fiscal year basis.

Long-Term Care Hospitals

Claims included

NCH_CLM_TYPE_CD = 60, 61 and Substr (PROVIDER_ID, 3,2) = 20-22

In general – standardization method for LTCH claims depends on whether or not the claim is for a short stay

Specifically

- Short stay outliers are claims with a length of stay less than or equal to 5/6 of the geometric mean length of stay for the LTC-DRG
- The beneficiary's LOS is CLM_UTLZTN_DAY_CNT
- Finally, claims with a $0 actual payment and no Medicare covered days are given a standardized payment $0.

1) Short stay claims

Description

- The standardized amount starts with the actual payment amount on the claim and adds back in any deductible & coinsurance. This total is then adjusted for differences in wages using the wage index applicable in the area. (The weight applied to the hospital wage index is equal to LTCH labor share.) Any deductible & coinsurance are then removed from this amount.

Formula

$$Standardized\ payment = \frac{Actual\ payment + Deductible + Coinsurance}{(LTCH\ Labor\ Share\ x\ Wage\ Index) + (1 - LTCH\ Labor\ Share)} - Deductible - Coinsurance$$

Sources

- Actual payment amount is CLM_PMT_AMT.
- Deductible and coinsurance from the claim are NCH_BENE_IP_DDCTBL_AMT and NCH_BENE_PTA_COINSRNC_LBLTY_AMT

- Wage index is determined based on PROVIDER_ID. The CBSA of the provider is determined and the associated wage index is used from the SNF crosswalk on CMS website. If the CBSA of a provider cannot be determined, a wage index of 1.0 is assumed.
- Medicare covered days are from CLM_UTLZTN_DAY_CNT

Comments

- In the previous version of standardization (V.1), we adjusted the claim payment amount for differences in wages. However, since this actual amount had been reduced to reflect any deductible or coinsurance, we are not reflecting the full impact of difference in wages.
- Rather than use separate schedules for IPF, IRF, LTCH and HHA, we use the SNF schedule which is closest to the underlying data. The schedule used changes on a fiscal year basis.
- We had previously defined short stay claims as situations where the length of stay is less than 5/6 of the geometric mean length of stay for the LTC-DRG. It should have been less than or equal to the geometric mean length of stay

2) Claims with normal LOS

Description

- The standardized amount is built up from the national base payment rate which is multiplied by the LTC-DRG weight for the discharge.
- Any outlier payments from the claim are added to this amount after adjusting to account for differences in wage costs. The weight applied to the hospital wage index is equal to the LTCH labor share.
- The base rates and the DRG schedule used depend on the fiscal year of the claim.
- Deductible and coinsurance amounts are then subtracted.

Formula

$$Standardized\ payment =$$

$$(Base \times LTCHDRG\ weight)$$

$$+ \frac{Outlier\ Payment}{(LTCH\ Labor\ Share\ x\ Wage\ Index) + (1 - LTCH\ Labor\ Share)}$$

$$-Deductible - Coinsurance$$

Sources

- national base rate and labor share taken from the relevant year's regulation.

- LTC-DRG weight (LTC_DRG_WGT) is determined by looking up the weight from the relevant year's regulation for the LTC-DRG number listed on the claim (CLM_DRG_CD).
- Outlier payment from the claim is NCH_DRG_OUTLIER_APRV_PMT_AMT.
- Wage index is determined based on PROVIDER_ID. The CBSA of the provider is determined and the associated wage index is used from the IRF crosswalk on CMS website.
- Deductible and coinsurance from the claim are NCH_BENE_IP_DDCTBL_AMT and NCH_BENE_PTA_COINSRNC_LBLTY_AMT
- Medicare covered days are from CLM_UTLZTN_DAY_CNT

Inpatient Rehabilitation Facilities

Claims included

NCH_CLM_TYPE_CD = 60, 61 and Substr (PROVIDER_ID, 3,4) = 3025 - 3099 or Substr (PROVIDER_ID, 3,1) equal to

- 'R' – Rehab unit in CAH
- 'T' – Rehab unit in IPPS hospital

In general – standardization method for IRF claims depends on whether or not the claim is for a short stay with discharge to certain post acute settings. Finally, claims with a $0 actual payment and no Medicare covered days are given a standardized payment $0.

Specifically

- The short stay formula is used for CMGs/tiers other than A5001 if:
    - Discharge status code is either:
        - 02 - discharged/transferred to other short term general hospital for inpatient care
        - 03 - Discharged/transferred to skilled nursing facility (SNF)
        - 61 - hospital-based, Medicare approved swing bed within the IRF
        - 62 - Discharged/transferred to an inpatient rehabilitation facility including distinct parts units of a hospital
        - 63 - Discharged/transferred to a long term care hospitals; or
        - 64 - Discharged/transferred to a nursing facility certified under Medicaid but not under Medicare (eff. 10/2002): **AND**
    - Length of stay (the greater of the "claim through" date minus the "claim from" date or 1) is less than the average length of stay for that CMG and tier.

1) Normal IRF Claims

Description

- The standardized amount is built up from the national base payment rate which is multiplied by the CMG weight for the discharge.
- Any outlier payments from the claim are added to this amount after adjusting to account for differences in wage cost. The weight applied to the hospital wage index is equal to .76.
- The base rates and the DRG schedule used depend on the fiscal year of the claim.
- Deductible and coinsurance amounts are then subtracted.

Formula

$$Standardized\ payment = (Base \times CMG\ weight) + \frac{Outlier\ Payment}{(IRF\ Labor\ Share\ x\ Wage\ Index) + (1 - IRF\ Labor\ Share)} - Deductible - Coinsurance$$

Sources

- National base rate and labor share taken from the relevant year's regulation.
- CMG weight (`CMG_WGT`) is determined from CMS table based on combination of tier and CMG found in `hcpcs_cds` when `Rev_cntr` = 0024,
  - The letter at the start determines the tier - B-tier 1, C-tier 2, D-tier-3, A-none
  - The last four digits gives the CMG number
- Outlier payment from the claim is `NCH_DRG_OUTLIER_APRV_PMT_AMT`.
- Wage index is determined based on `PROVIDER_ID`. The CBSA of the provider is determined and the associated wage index is used from the SNF crosswalk on CMS website. If the CBSA of a provider cannot be determined, a wage index of 1.0 is assumed.
- Deductible and coinsurance from the claim are `NCH_BENE_IP_DDCTBL_AMT` and `NCH_BENE_PTA_COINSRNC_LBLTY_AMT`
- Medicare covered days are from `CLM_UTLZTN_DAY_CNT`

Comments

- IRFs in rural areas receive a 18.4% add-on. We did not include this additional payment consistent with our not including the additional payments to Sole Community Hospitals. In addition, IRFs that treat a disproportionate share of low-income patients receive an adjustment referred to as Low-Income Percentage Adjustment (LIP); as is the case with DSH payments to IPPS hospitals, we are not including these additional payments. Finally, IRFs can receive a teaching adjustment. As is the case with IME payments to IPPS hospitals, we are not including these additional payments.
- Rather than use separate schedules for IPF, IRF, LTCH and HHA, we use the SNF schedule which is closest to the underlying data. The schedule used changes on a fiscal year basis.

2) Short Stay IRF Claims

Description

- The standardized amount is built up from a CMG/tier specific per diem amount.

- Any outlier payments from the claim are added to this amount after adjusting to account for differences in wage cost. The weight applied to the hospital wage index is equal to the IRF labor share.
- Deductible and coinsurance amounts are then subtracted.

Formula

$$Standardized\ payment =$$

$$\frac{Base\ xCMG\ Weight}{ALOS} \times (LOS\ + .5)$$

$$+ \frac{Outlier\ Payment}{(IRFLabor\ Share\ x\ Wage\ Index) + (1 - IRF\ Labor\ Share)}$$

$$-Deductible - Coinsurance$$

Sources

- See above
- Length of stay is the greater of the "claim through" date minus the "claim from" date or 1.
- The average LOS for each CMG-Tier comes from a table for the relevant year
- Medicare covered days are from `CLM_UTLZTN_DAY_CNT`
- Deductible and coinsurance from the claim are `NCH_BENE_IP_DDCTBL_AMT` and `NCH_BENE_PTA_COINSRNC_LBLTY_AMT`

Comments

- During our review of the preliminary standardization run for V2, we found 2.8% of our actual dollars in claims where our standardized amount exceeded the actual amount by a factor of 2 or more. We determined that these cases were generally relatively short stays. After contacting CMM, we learned about a policy that discounts the payment for short stays where the patient is transferred to certain settings.

Skilled Nursing Facilities

Claims included

NCH_CLM_TYPE_CD = 20, 30 (for beneficiaries with Part A who have not exhausted their coverage)

NCH_CLM_TYPE_CD = 40, bill types 22x (for beneficiaries without Part A or who have exhausted their coverage) and 23X (outpatient services provided by SNFs)

In general – the standardization method for SNF claims depends on whether the beneficiary is receiving traditional inpatient services and has Part A coverage available; and if so, whether the claim is for a CAH swing bed or a PPS SNF. Finally, claims with a $0 actual payment and no Medicare covered days are given a standardized payment $0.

Specifically

- For CAH Swing bed claims, the base claim record does not link with a revenue center record with **REV_CNTR** = 0022. PPS SNF claims do link.

1) CAH Swing bed claims

Description

The standardized amount starts with the actual payment amount on the claim and adds back in any coinsurance. This total is then adjusted for differences in area wages. Any coinsurance is then removed from this amount.

Formula

$$Standardized\ payment = \frac{Actual\ payment + Coinsurance}{(SNF\ Labor\ Share\ x\ Wage\ Index) + (1 - SNF\ Labor\ Share)} - Coinsurance$$

Sources

- Actual payment amount is CLM_PMT_AMT.
- SNF labor share taken from the relevant year's regulation.
- Coinsurance from the claim is NCH_BENE_PTA_COINSRNC_LBLTY_AMT
- Wage index is determined based on PROVIDER_ID. The first two digits of the provider ID are used to identify the provider's state. Then, the state rural wage index from the SNF

crosswalk on CMS website is determined. If this couldn't be determined, the wage index was set at 1.0.

- Medicare covered days are from CLM_UTLZTN_DAY_CNT

Comments

- CAH swing beds are currently paid 101% of the actual costs. Unlike SCHs and MDHs, CAH costs are current costs rather than costs from a base period that are trended forward by a national factor. Given their unique payment system and the goal of reflecting differences in cost resulting from different types of providers, the current standardization methodology makes no adjustments.
- There are a range of alternative approaches to CAH swing beds.
    - One could adjust the payment amount to remove the 1% above costs paid to CAH, treating it as a "social payment".
        - This approach raises the question about whether the higher payment to CAH is comparable to the IME or DSH payment. If there is a social payment here is it only the 1% above costs?
- In conjunction with the previous option or separate, one could adjust for wages using applicable area wage index. This would increase payments.
- For this round of standardization (V.2), we chose to adjust actual CAH swing bed allowed amounts for differences in wages. We assumed the SNF labor share.

2) PPS SNF Claims

Description

- The standardized amount is built up from the average of the urban and rural base rates.
    - The average nursing rate is multiplied by the applicable RUG nursing weight.
    - For non- rehab RUGs, the therapy portion of the rate is based on the average non-rehab therapy rate.
    - For rehab RUGs, the average rehab therapy rate is multiplied by the RUG therapy weight.
    - A national average "other" rate is then added to the nursing and therapy amounts.
- The base rates and the RUG schedule used depend on the fiscal year of the claim.
- This per diem amount is multiplied by the number of covered days.
- An additional 128% in provided for beneficiaries with AIDS
- Costsharing amounts are then subtracted.
- If the RUG on the revenue center line cannot be matched to a RUG weight, we follow the formula for CAH swing beds.

Formula

$$Standardized\ payment =$$

$$Applicable\ Per\ Diem \times Days \times 2.28\ (AIDS\ adjustment, if\ applicable)$$

$$-Deductible - Coinsurance$$

$$Per\ Diem\ for\ Non\text{-}Rehab\ Rugs =$$

$$(Nursing\ base\ \times\ RUG\ weight) + Nonrehab\ base + Other\ Base$$

$$Per\ Diem\ for\ Rehab\ Rugs =$$

$$(Nursing\ base\ \times\ RUG\ weight) + (Rehab\ base\ \times\ RUG\ weight) + Other\ Base$$

Sources

- Various base rates taken from the relevant year's regulation and are the average of the urban and rural rates.
- Number of SNF days is `rev_cntr_unit_cnt`
- AIDS adjustment is applicable if the first 3 characters of any diagnoses listed on the claim (`dgns_cd`) equals 042.
- RUG weight or weights (`NURSING_WGT, THERAPY_WGT`) are determined by looking up the weights from the relevant year's regulation for the RUG listed on the claim. The RUG is Substr (`HCPCS_CD`,1,3).
- Coinsurance from the claim -- `NCH_BENE_PTA_COINSRNC_LBLTY_AMT`
- Medicare covered days are from `CLM_UTLZTN_DAY_CNT`

Comments

- SNF per diem payments for residents with Acquired Immune Deficiency Syndrome (AIDS) are increased by 128%. In the previous version of standardization, we had been increasing these payments by 28%.
- For 2010, we found 394 revenue center line items out of 8,442,558 that had one of 10 RUGs from the Hybrid Rug-III list. These lines had `clm_from_dt`'s in September and `clm_thru_dt`'s in October. We treated these claims as CAH swing beds.

3) SNF Claims for beneficiaries without Part A or who have exhausted their coverage and Claims for outpatient services provided by SNFs

Description

- We first try to match the HCPC on each revenue center line to various Part B fee schedules in the following order (see the relevant sections below for a full description – the major difference is that we are matching HCPCs on revenue center lines, rather than on claim lines):
    - the physician fee schedule
    - the lab fee schedule
    - the ambulance fee schedule &
    - DMEPOS fee schedule
- The standardization methodology is the same in concept as that for relevant fee schedule; differences result from using institutional claims rather than non-institutional claims (e.g., revenue center lines vs claim lines, variables that are the same in concept have different names) and where there may be policy differences in adjustments made for institutional claims vs. non-institutional claims (e.g. adjustment in 2011 for multiple therapy services).
- For remaining revenue center lines that don't match, the standardized payment is equal to the actual payment.

- Part B coinsurance adjustment factor equals 1 – rev center line coinsurance rate

Where rev center line coinsurance rate =

$$\frac{Coinsurance}{provider\ payment\ amount + coinsurance}$$

Sources

- Coinsurance is `Revenue Center Coinsurance/Wage Adjusted Coinsurance Amount`
- Provider Payment is `Rev centr prvdr pmt amt`
- Applicable deductible is `REV_CNTR_CASH_DDCTBL_AMT`

Comments

- Based on analysis of one month's worth of data, the HCPCs on revenue center lines with 97.7% of the actual dollars matched to the physician fee schedule. Virtually all of the remaining dollars linked to the other fee schedules.

Home Health Agency

Claims included

NCH_CLM_TYPE_CD = 10

NCH_CLM_TYPE_CD =40, bill type 34X

In general – standardization method for HHA claims depends on claim type (i.e., 10 or 40) and for claim type 10 whether or not the claim is for a short episode. If actual payment is zero, then standard payment is set to zero.

Specifically

Claims are treated as short episodes if any of the following are applicable:

- REV_CNTR = 0023 is indicated more than once on a single claim (this occurs when there are more than one HHRGs on a single claim); or
- PTNT_DSCHRG_STUS_CD = '06' (discharge to another HHA); or
- CLM_HHA_TOT_VISIT_CNT < 5

1) Claim type 10 - short episodes

- Rather than building up the claim amount, we start with the actual payment amount and adjust it in the same manner described above for IPPS outlier payments to account for differences in wage costs. The weight applied to the wage index is equal to HHA labor share.

Formula

$$Standardized\ payment = \frac{Actual\ payment}{(HHA\ Labor\ Share\ x\ Wage\ Index) + (1 - HHA\ Labor\ Share)}$$

Sources

- Labor share taken from the relevant year's regulation.
- Actual payment amount is CLM_PMT_AMT.

- Wage index is determined based on the CBSA of the beneficiary. If the value code (VAL_CD) = 17, the value amount (VAL_AMT) is the code for the CBSA of the beneficiary. The associated wage index is used from the SNF crosswalk on CMS website. If the CBSA of a beneficiary cannot be determined, a wage index of 1.0 is assumed.

Comments

- Rather than use separate schedules for IPF, IRF, LTCH and HHA, we use the SNF schedule which is closest to the underlying data. The schedule used changes on a fiscal year basis.

2) Claim type 10 - Other HHA Claims

Description

- The standardized amount is built up from the base rate which is multiplied by the applicable HHRG weight based on first 4 positions of HIPPS code.
- For claims for 2008 and forward, a supply amount is added based on 5th position HIPPS code.
- Any outlier payments from the claim are added to this amount after adjusting to account for differences in wage costs. The weight applied to the wage index is equal to the HHA labor share.
- Any add-ons for prosthetics, DME or O2 are taken as is from the claim

Formula

$$Standardized\ payment = (Base \times HHRG\ weight) + Supply\ Amount + \frac{Outlier\ Payment}{(HHA\ Labor\ Share\ x\ Wage\ Index) + (1 - HHA\ Labor\ Share)} + Actual\ payment\ for\ Addons$$

Sources

- base rates taken from the relevant year's regulation.
- HHRG weight (HIPPS_WGT) is the weight corresponding to the HHRG which is either
  - hcpcs_cd=substr(apc,1,4)
  - if apc='00000' then hcpcs_cd=substr(hcpcs_cd,1,4)

  note: In 2007, and to some extent in 2008 HHRG's, were three characters in the schedule, so hcpcs_cd =substr(hcpcs_cd,2,3).

- HHRG supply weight is the weight corresponding to either
    - hcpcs_cd=substr(apc,5,1)
    - if apc='00000' then hcpcs_cd=substr(hcpcs_cd,5,1)
- Outlier payment from the claim = CLM_VAL_AMT when VAL_CD = 17
- Wage index is determined based on the CBSA of the beneficiary. If the value code (VAL_CD) = 61, the value amount (VAL_AMT) is the code for the CBSA of the beneficiary. The associated wage index is used from the SNF crosswalk on CMS website. If the CBSA of a beneficiary cannot be determined, a wage index of 1.0 is assumed.
- Add-ons from claim = REV_CNTR_PMT_AMT when REV_CNTR
    - = 0274 prosthetics
    - = 029* DME
    - = 060* oxygen

Comments

- The previous version of standardization (V.1) hadn't captured the supply add-on based on the 5th position of the HIPPS that started in 2008. We were unaware of this change. When we looked at this issue, we saw that payments supplies for our population totaled $262 million in 2008.
- Rather than use separate schedules for IPF, IRF, LTCH and HHA, we use the SNF schedule which is closest to the underlying data. The schedule used changes on a fiscal year basis.

3) Claim type 40

Description

- The standardized amount for these claims is equal to the actual payment amount.

Comments

- This category is only a small proportion of type 40 claims (0.01%). According to CMM, these claims are used mostly for osteoporosis drugs.

Hospice

Claims included

NCH_CLM_TYPE_CD = 50

In general – standardization method for Hospice claims depends on whether the revenue center line is for certain physician or NP services or one of the four hospice service categories. Since continuous home care is an hour rate, it has a different formula than the other three service types. If actual payment is zero then standard payment is set to zero. The base rates used depend on the fiscal year of the date of service on the claim.

Specifically

Revenue center lines are categorized based on the revenue center code used (REV_CNTR)

- 0657 indicates a revenue center line for services furnished to patients by physician or nurse practitioners.
- 0652 indicates a revenue center line for continuous home care
- 0651 indicates a revenue center line for routine home care
- 0655 indicates a revenue center line for inpatient respite care
- 0656 indicates a revenue center line for general inpatient care

1) Revenue center lines for services furnished to patients by physician or nurse practitioners

Description

The standardized amount is the same as the actual payment amount for the revenue center line.

Formula

Standardized payment = Actual payment for the revenue center line.

Sources

- Actual payment amount is Revenue Center Provider Payment Amount

Comments

- When we looked at this previously, the total dollars paid did not appear to merit the effort to determine any adjustments.

- In our previous version of standardization, we had been taking the actual payment amount as the standardized payment; however, instead of taking the payments amount for the relevant revenue center line, we picked up the entire claim amount.

2) Revenue center lines for continuous home care (CHC)

Description

- The standardized amount is built up from the applicable base rate which is multiplied by the portion of the day (hours/24) during which services were provided.

Formula

$$Standardized\ payment = CHC\ base \times \frac{Units}{4}$$

Sources

- Base rates taken from the annual Change Request for the Medicare Claims Processing Manual issued in late July / early August every year.
- Units = min(rev_cntr_unit_cnt/4,24) -- Units are reported in 15 minute increments. We limit the units to 24 hours which is a claim processing edit not reflected on the paid claim in the CCW.

Comments

- We discovered after our first go round that units are limited to 24 hours in a day for payment purposes, but the unit counts in the CCW do not reflect this limit. Using the actual units results in some bizarrely high and incorrect standardized amounts. This was addressed in the claims processing system effective 10/1/10.

3) Revenue center lines routine home care (RHC), inpatient respite care (IRC) and general inpatient care (GIC)

Description

- The standardized amount is built up from the applicable base rate which is multiplied by the unit count.

Formula

$$Standardized\ payment = Base \times Units$$

Sources

- Base rates taken from the annual Change Request for the Medicare Claims Processing Manual issued in late July / early August every year.
- Units = min(rev_cntr_unit_cnt,los) where LOS= `clm_thru_dt-clm_from_dt` + 1. Units are reported in days. We limit the units to the length of stay which is a claim processing edit not reflected on the paid claim in the CCW.

Comments

- We discovered after our first go round that units are limited to the LOS for payment purposes, but the unit counts in the CCW do not reflect this limit. Using the actual units results in some standardized amounts that overstate what was paid. This was addressed in the claims processing system effective 10/1/10.

Rural Health Clinics (RHC) or Federally Qualified Health Centers (FQHC)

Claims included

NCH_CLM_TYPE_CD = 40 and clm_fac_type_cd='7' and either:

- clm_srvc_clsfctn_type_cd='1' - RHC; or
- clm_srvc_clsfctn_type_cd='3' (or "7" starting in 2010) - FQHC

Description

The standardized amount starts with the actual payment amount on the claim which is then adjusted to add back cost-sharing and then further adjusted for differences in wages using the wage index applicable in the area.

Formula

$$Standardized\ payment = \left\{\frac{(1.25xActual\ payment) + Deductible}{(OPD\ Labor\ Share\ x\ Wage\ Index) + (1 - OPD\ Labor\ Share)} - Deductible\right\}x.8$$

Sources

- Actual payment amount is rev_cntr_prvdr_pmt_amt.
- OPD labor share taken from the relevant year's regulation.
- Wage index is determined based on PROVIDER_ID. The CBSA of the provider is determined and the associated wage index is used from the SNF crosswalk on CMS website. For RHCs, if the CBSA of a provider cannot be determined, the state rural wage index is used. For FQHCs, a wage index of 1.0 would be used.
- Part B deductible from the claim is rev_cntr_cash_ddctbl_amt
- Part B coinsurance adjustment factor of .8

Comments

- The previous version of standardization simply picked up the actual payment amount from the claim as the standardized amount; as a result allowed amounts were not adjusted for differences in wages.
- Uses the same weight for the wage index that we use for OPD.

- The OPD wage index table is based on provider number and therefore not usable here. For simplicity reasons, we use the SNF schedule. The schedule used changes on a fiscal year basis.
- During the review of our initial results, we found that the bill type for FQHCs appeared to have changed from 73X to 77X during 2010.

CORFs and ORFs

Claims included

NCH_CLM_TYPE_CD = 40 and clm_fac_type_cd='7' and either:

- clm_srvc_clsfctn_type_cd='4' - ORF; or
- clm_srvc_clsfctn_type_cd='5' – CORF

Description

- While CORFs and ORFs use institutional claims, they are paid for their services under the physician fee schedule, so the standardization methodology is the same in concept as that for physician services; differences result from using institutional claims rather than non-institutional claims (e.g., revenue center lines vs claim lines, variables that are the same in concept have different names) and where there may be policy differences in adjustments made for institutional claims vs. non-institutional claims (e.g. adjustment in 2011 for multiple therapy services).
- For any revenue center lines that do not match, the standardized amount is equal to the actual amount
- Part B coinsurance adjustment factor equals 1 – rev center line coinsurance rate

Where rev center line coinsurance rate =

$$\frac{Coinsurance}{provider\ payment\ amount + coinsurance}$$

Sources

- Coinsurance is Revenue Center Coinsurance/Wage Adjusted Coinsurance Amount
- Provider Payment is Rev centr prvdr pmt amt
- Applicable deductible is REV_CNTR_CASH_DDCTBL_AMT

Comments

- In the previous version of standardization, CORFs and ORFs were included in the totals for Hospital Outpatient. This overstated payments to OPDs and distorted the services that they provide.

- Based on analysis of one month's worth of data, the HCPCs on revenue center lines with 99.9% of the actual dollars matched to the physician fee schedule.

Community Mental Health Centers

Claims included

NCH_CLM_TYPE_CD = 40 and clm_fac_type_cd='7' and clm_srvc_clsfctn_type_cd='6'

Description

CMHCs are paid for their services under the OPD fee schedule, so the standardization methodology is that described below for Non-MD Hospital outpatient services.

Comments

- In the previous version of standardization, CMHCs were included in the totals for Hospital Outpatient. This overstated payments to OPDs and distorted the services that they provide.

Renal Dialysis Facilities

Claims included

NCH_CLM_TYPE_CD = 40 and clm_fac_type_cd='7' and clm_srvc_clsfctn_type_cd='2'

Description

In general, the standardization methodology works back from the paid amount of the revenue center line.

For 2007 – 2010:

- for dialysis revenue center codes, we start with the payment amount and put back the coinsurance amount, then subtract out the training payment (if applicable), add back in the deductible, divide by the wage index, then add back the training payment, subtract the deductible amount and multiply by a coinsurance adjustment factor.
- For other revenue center lines that include drugs, we use the amount paid.
- For revenue center lines for lab services, we follow the lab rules described elsewhere in the document.

For 2011, our methodology assumes payment under the new payment system where all drugs and lab services previous paid separately are now bundled.

- For dialysis revenue center codes, we start with the payment amount, subtract any claim outlier payment, subtract out a 100% wage adjusted training payment (if applicable), add back in the cost-sharing, divide by the wage index, then add back the unadjusted training payment, subtract the deductible amount and multiply by .8.
- Any other revenue center lines are ignored since they are included in the rate

Formula

For 2007 – 2010

Based on dialysis revenue center lines:

$$Standardized\ payment =$$

$$\left\{\frac{(1.25 x Actual\ payment) - Training\ payment + Deductible}{(OPD\ Labor\ Share\ x\ Wage\ Index) + (1 - OPD\ Labor\ Share)}\right.$$

$$\left. + Training\ payment - Deductible\right\} \times (1 - rev\ center\ line\ coinsurance\ rate)$$

Where rev center line coinsurance rate =

$$\frac{Coinsurance}{provider\ payment\ amount + coinsurance}$$

For drug revenue center lines – *standardized payment = actual payment*

For clinical lab revenue center lines the standardization methodology is the same in concept as that for clinical labs services; differences result from using institutional claims rather than non-institutional claims (e.g., revenue center lines vs claim lines, variables that are the same in concept have different names).

For 2011

Based on the total of dialysis revenue center line payments on a claim:

Standardized payment =

$$\left\{\frac{dialysis\ total - outlier - (training\ rate \times wage\ index \times number\ of\ training\ lines) + Deductible + Coinsurance}{(ESRD\ Labor\ Share\ x\ Wage\ Index) + (1 - ESRD\ Labor\ Share)} + outlier \right.$$
$$\left. + (training\ rate \times number\ of\ training\ lines) - Deductible - Coinsurance \right\}$$

Ignore all other revenue center lines

Sources

- A training revenue center line is a line with a revenue center dialysis code and condition code 73.
- Revenue center codes are found in `REV_CNTR` – the following codes indicate dialysis prior to 2011 - 821, 831, 841, 851, 880, 881 – Starting in 2011, 880 is not longer recognized
- Prior to 2011, a training payment was applicable in the presence of certain revenue center dialysis codes and condition code 73 on the revenue center line. The payment varied by dialysis code:
    - $20 for 821, 831, 851
    - $12 for 841
- Starting in 2011, a fully wage adjusted training payment was applicable in the presence of any revenue center dialysis codes and condition code 73 on the revenue center line. The national training rate was ($33.44).
- Starting in 2011, any claim outlier payments are shown in `value code` = 17
    - Wage index is determined based on `PROVIDER_ID.` The CBSA of the provider is based on a CMS list and is used to determine the associated wage index from the SNF crosswalk on

CMS website. If the CBSA of a provider cannot be determined, a wage index of 1.0 would be used.

- Coinsurance is `Revenue Center Coinsurance/Wage Adjusted Coinsurance Amount`
- Deductible from the claim is `REV_CNTR_CASH_DDCTBL_AMT`
- Provider Payment is `Rev centr prvdr pmt amt`

Comments

- In the previous version of standardization, dialysis facilities were included in the totals for Hospital Outpatient. This overstated payments to OPDs and distorted the services that they provide.
- Prior to 2011, some dialysis facilities received a special rate through an exception process. The difference between these special rates and the normal rates are not recognized under standardization since the difference is viewed as a "social payment"
- Starting in 2011, there is a low-volume adjustment; this adjustment is not included consistent with treatment of similar adjustments under the other payment systems.
- We opted for a methodology of working back from the paid amount for the new system in part because we did not have access to "return codes" which indicate the patient specific adjustment to be made to the base rate.
- We assume that all facilities have opted for the new system without transition; the overwhelming majority have done so.
- For ESRD, training payments and outlier payments are subject to coinsurance. In addition, the outlier payment is reflected both in the revenue center line amount and aggregated at the claim level. In 2011, training payments are 100% wage adjusted.

Hospital Outpatient Claims

Claims included

NCH_CLM_TYPE_CD = 40 and

clm_fac_type_cd='1' and clm_srvc_clsfctn_type_cd='3'

In general – standardization method for Hospital Outpatient claims depends on whether the claim is from a Maryland hospital or not.

If it isn't for a Maryland hospital, the method used for a particular revenue center line depends on whether it is for a service paid for:

- on reasonable cost or pass-through basis
- under the OPD PPS; or
- under another fee schedule

Any outlier payments on the claim are adjusted for differences in wage costs using the wage index.

Specifically

- Maryland hospitals are identified based on the provider ID based on the list of provider Ids supplied by the Maryland Rate-Setting Commission.
- Reasonable costs or pass-through revenue center lines are identified by status indicator (rev_cntr_stus_ind_cd on the claim) equal to:
  - F – Corneal Tissue acquisition, certain CRNA services and Hepatitis B vaccines
  - G - Drug/biological pass-through
  - H - Device or Therapeutic Radiopharmaceuticals pass-through
  - L – Influenza or Pneumococcal Pneumonia vaccines
- Revenue center lines paid under the OPD fee schedule have an APC or are packaged into an APC and have an "N" payment status indicator.
  - The standardization methodology looks for the revenue center lines with APCs. Within this category, revenue center lines with a "P","T" or "X" status indicator may require special treatment as described below.
  - For revenue center lines with the "N" indicator, the actual payment (always $0) is the standardized payment amount.
- Revenue center lines with an "A" payment status indicator are paid under a different fee schedule or payment system.
- The dollar amount on any revenue center line that can't be match to a fee schedule will be treated as the standardized amount.
- The outlier amount from the claim is taken and adjusted for differences in wages.

1) Claims for services furnished Maryland hospitals

Description

The standardized amount is derived by applying a year-specific, hospital-specific factor to the actual paid claims amount. The factors were developed based on data supplied from Maryland's Health Services Cost Review Commission and are designed to remove MD's equivalent of IME/DSH spending from the state's hospital payments for both inpatient and outpatient services.

Formula

$$Standardized\ payment =$$

$$\{\frac{(1.25xActual\ payment \times Hospital\ specific\ factor) + Deductible}{(OPD\ Labor\ Share\ x\ Wage\ Index) + (1 - OPD\ Labor\ Share)}$$

$$-Deductible\}x.8$$

Sources

- Actual payment amount is `CLM_PMT_AMT`.
- Hospital-specific factors supplied by PDAG based on data from Maryland's Health Services Cost Review Commission
- Deductible from the claim is `REV_CNTR_CASH_DDCTBL_AMT`
- Part B coinsurance adjustment factor of .8
- Wage index is determined by looking up the post reclassification wage index from the relevant year's regulation for the provider ID on the claim (`PROVIDER_ID`).

Comments

- We initially treated Maryland hospitals the same as IPPS hospitals. Given that Maryland had its own system, we felt that this approach was not appropriate. We then took the approach of just taking the paid claim amount adjusted for wage difference as the standardized amount. In public data releases, we made note of the fact that these standardized amounts included MD's equivalent of certain social payments (IME, GME and DSH). Subsequently, working with Maryland's Health Services Cost Review Commission, we developed a series of year-specific, hospital-specific factors that would back out MD's equivalent of IME/DSH spending from the state's hospital payments for both inpatient and outpatient services.

2) Non-MD Claims - Revenue center lines for reasonable costs or pass-through services

Description

The standardized amount is the same as the actual payment amount on the line.

Formula

Standardized payment = Actual payment from the revenue center line

Sources

- Actual payment amount is `Revenue Center Provider Payment Amount`
- Payment status indicators are `rev_cntr_stus_ind_cd`

Comments

- No adjustment is made for deductible and coinsurance when the standard amount is simply the actual payment.

3) Non-MD Claims - Revenue center lines with an APC

Description

- For revenue center lines with an APC and a "P" status indicator in 2007 we use the actual payment as the standardized amount.
- For revenue center lines with an APC and a "T" payment status indicator, we work back from the actual payment to determine the standardized amount.
- For revenue center lines with an APC and a "X" payment status indicator, the standardized payment amount will equal the actual payment amount for the line when the APC is 310, 344, 366, 369, 31, 368, 317, 272, 263, 261, 624 or 260 and units greater than 1.
- For all other revenue center lines with an APC, the standardized amount is equal to the OPD PPS schedule; except, that in the case of reduced[1] or discontinued[2] procedures, we follow the payment rule. Deductible is then subtracted and the remaining amount is adjusted for coinsurance.

Formulas

For revenue center lines with an APC and a "T" payment status indicator:

Standardized payment =

[1] Procedures for which anesthesia is not planned that are discontinued after the patient is prepared and taken to the room where the procedure is to be performed.

[2] Procedures for which anesthesia is planned that are discontinued after the patient is prepared and taken to the room where the procedure is to be performed but before they receive anesthesia.

$$\{\frac{(\frac{1}{coinsurance\ adjustment\ factor} \times Actual\ payment) + Deductible}{(OPD\ Labor\ Share\ x\ Wage\ Index) + (1 - OPD\ Labor\ Share)} - Deductible\} x coinsurance\ adjustment\ factor$$

For revenue center lines with: an APC of 310, 344, 366, 369, 31, 368, 317, 272, 263, 261, 624 or 260; a "X" payment status indicator; and units greater than 1 or "P" payment status indicator (2007 only):

Standardized payment = the actual payment

For all other revenue center lines with an APC that can be linked to the OPD fee schedule:

In general, standardized payment =

$$[(APC\ fee\ schedule\ amount \times units^{3}) - deductible] \times coinsurance\ adjustment\ factor$$

If modifier=52 or 73, then Standardized payment =

$$\left[\left(APC\ fee\ schedule\ amount * \frac{.5}{units}\right) - deductible\right] \times coinsurance\ adjustment\ factor$$

If there is a national unadjusted copayment for the service, coinsurance adjustment factor =

$$\left(1 - \frac{National\ unadjusted\ copayment)}{APC\ fee\ schedule\ amount}\right)$$

If there is no national unadjusted copayment for the service, coinsurance adjustment factor =

$$\left(1 - \frac{Minimum\ unadjusted\ copayment)}{APC\ fee\ schedule\ amount}\right)$$

If the neither a national unadjusted copayment or minimum unadjusted copayment can be found for the APC, the coinsurance adjustment factor is = .8

For all other revenue center lines with an APC that cannot be linked to the OPD fee schedule:

Standardized amount = actual amount.

Sources

[3] Units ignored for "P" status indicator in 2008 and subsequent years.

- APC is substr(rev_cntr_apc_hipps_cd,2,4)
- Payment status indicators are rev_cntr_stus_ind_cd
- Reduced procedures are indicated by Modifier_Cd equals 52
- Discontinued procedures are indicated by Modifier_Cd equals 73
- Units is rev_cntr_unit_cnt
- The national unadjusted copayment and the minimum unadjusted copayment come from the OPD PPS fee schedule.
- Wage index is determined by looking up the OPD PPS wage index from the relevant year's regulation for the provider ID on the claim (PROVIDER_ID).

Comments

- In the previous version of standardization, we had not been taking the units field into account in determining standardized payment amounts.
- In our preliminary data runs, we saw discrepancies between our standardized amounts and actual amounts for "T" payment status indicator. It was clear that adjustments were being made to the payment amount for various policy reasons but the claim itself did not provide any guidance on the adjustments being made. We therefore determined to work back from the actual amount.
- Also, in our preliminary data runs, we saw discrepancies between our standardized amounts and actual amounts for "X" payment status indicator for certain APCs when units were greater than one. Given that the dollars under this payment status indicator for the codes in question with units greater than one were relatively small, we decided to take the actual amount for these lines.
- For APCs with "P" status indicator, we had difficulty determining how units were used in the payment formula in 2007; as a result, we used the actual amount as the standardized amount. For 2008, based on examining ratios of standardized to actual dollars, it appeared that units on the claim were ignored; so, we ignored them. Starting in 2009, the partial hospitalization APCs incorporate units into their definition so it is no longer appropriate to multiple by the reported units.

4) Non-MD Claims - Revenue center lines with a "A" Payment Status Indicator

Description

We attempt to match the HCPC on the revenue center line to the various Part B fee schedules in this order: lab fee schedule, physician fee schedule, ambulance fee schedule & DMEPOS fee schedules. The standardization methodology is the same in concept as that for the matching fee schedule; differences result from using institutional claims rather than non-institutional claims (e.g., revenue center lines vs claim lines, variables that are the same in concept have different names) and where there may be policy differences in adjustments made for institutional claims vs. non-institutional claims (e.g. adjustment in 2011 for multiple therapy services). If the HCPC cannot be matched, the standardized amount is equal to the actual amount paid on the revenue center line.

Sources

- The relevant fee schedule is determined by the procedure on the revenue center line (`HCPCS_CD`) and, in the case of lab and physician services, any modifiers (`MOD`)

Comments

- In the previous version of standardization, we had not been taking the units field into account in determining standardized payment amounts.
- In developing V2, we found an error in our handling of lab claims in V1 where we had been applying .8 to the standardized allowed amount. There is no coinsurance for lab claims.

5) Non-MD Claims – Outlier payments

Description

- The outlier amount is on the claim rather than a revenue center line. Any outlier amounts are adjusted to remove the effect of the wage index

Formula

$$Standardized\ payment = \frac{Outlier\ Payment}{(.6\ x\ Wage\ Index) + .4}$$

Sources

- The outlier payment from the claim = `CLM_VAL_AMT` when `VAL_CD` = 17
- Wage index is determined by looking up the OPD PPS wage index from the relevant year's regulation for the provider ID on the claim (`PROVIDER_ID`).

Critical Access Hospital – Hospital Outpatient Services

NCH_CLM_TYPE_CD = 40

Substr(PROVIDER_ID,3,2) = 13 and

clm_fac_type_cd='8' and clm_srvc_clsfctn_type_cd='5'

Description

The standardized process is similar to that for inpatient claims with the only difference the result from different claim types. We start with the actual payment amount on the claim, add back in any deductible & coinsurance and then adjust this total for differences in area wages. Any deductible & coinsurance are then removed from this amount.

Formula --

$$Standardized\ payment = \{\frac{(1.25x\ Actual\ payment) + Deductible}{(OPD\ Labor\ Share\ x\ Wage\ Index) + (1 - OPD\ Labor\ Share)} - Deductible\}x.8$$

Sources

- Actual payment amount is rev_cntr_prvdr_pmt_amt.
- Deductible from the claim is rev_cntr_cash_ddctbl_amt
- Part B coinsurance adjustment factor of .8
  Wage index is determined based on PROVIDER_ID. The first two digits of the provider ID are used to identify the provider's state. Then, the state rural wage index from the SNF crosswalk on CMS website is determined. If this couldn't be determined, the wage index was set at 1.0.

Comments

- See discussion above for CAH Inpatient **Services**

Services Provided By Hospitals to Inpatients without Part A Coverage or With Exhausted Part A Coverage

Claims included

```
NCH_CLM_TYPE_CD = 40 and
clm_fac_type_cd='1'  and  clm_srvc_clsfctn_type_cd='2'
```

In general – standardization method depends on whether the claim is from a CAH, a Maryland Hospital or other hospital.

Specifically

- CAH are indentified based on the provider ID Substr(PROVIDER_ID,3,2) = 13
- Maryland hospitals are identified based on the provider ID based on the list of provider IDs supplied by the Maryland Rate-Setting Commission.

1) Claims from CAHs

Description – Standardization follows the rule described above for CAH outpatient services.

2) Claims from MD Hospitals

Description – Standardization follows the rule described above for MD Hospital outpatient services.

3) All of other Claims

Description – Standardization follows the rule described above for Non-MD Hospital outpatient services.

Services Provided By Hospitals to "Non-Patients"

Claims included

```
NCH_CLM_TYPE_CD = 40 and

clm_fac_type_cd='1' and clm_srvc_clsfctn_type_cd='4'
```

In general –standardization method depends on whether the claim is from a CAH, a Maryland Hospital or other hospital.

Specifically

- CAH are indentified based on the provider ID Substr `(PROVIDER_ID,3,2) = 13`
- Maryland hospitals are identified based on the provider ID based on the list of provider IDs supplied by the Maryland Rate-Setting Commission.

1) Claims from CAHs

Description – Standardization follows the rule described above for CAH outpatient services.

Comments –

- 9.5% of all CAH type 40 claims are in this category.

2) Claims from MD Hospitals

Description – The standardized amount equals the actual claim amount.

3) All of other Claims

Description – We first try to match the HCPC on the revenue center line to the lab fee schedule. For matching lines, the standardization methodology is the same in concept as that for clinical labs services; differences result from using institutional claims rather than non-institutional claims (e.g., revenue center lines vs. claim lines, variables that are the same in concept have different names). For all other revenue center lines, the standardized payment = actual payment.

Comments –

- Examining 1 month’s worth of claims form 2008, 96% of revenue center line items matched to the lab fee schedule.

Other Claim Type 40 Services

Claims included

`NCH_CLM_TYPE_CD = 40 and`

- `clm_fac_type_cd`='8' and `clm_srvc_clsfctn_type_cd`='3'

Description – the standardized amount equals the actual claim amount.

Comments

- We had trouble determining who submits these claims and how they are paid. CMM has indicated that they could be: hospitals with ASCs and IHS services to outpatient. Examination of the data after this version of standardization was finalized revealed that 98% of the dollars in this category are paid to Maryland Rate-Setting Commission hospitals. In determining the standardization methodology, we tried matching to the physician fee schedule and using the OPD rules; neither approach was a good fit. Since the dollars in this category are less than 0.1% of all claims type 40 dollar, we opted to use the actual amount for this round.

Physician Services

Claims included

All Part B non-institutional claims in the appropriate BETOS groups (described below).

In general – standardization method for physician services depends on whether the claim is for anesthesia or for other physician services

Specifically

- Anesthesia claims are identified by `BETOS_CD` = P0;
- Physician claims are identified by the following BETOS groups:
  - all E&M (M),
  - all procedures (P),
  - all imaging (I),
  - all other diagnostic tests (T2),
  - chiropractic (O1B),
  - vision, hearing and speech services (O1F) and
  - other lab test (T1G).

1) Claims for Anesthesia services

Description

- The standardized amount is built up from the conversion factor multiplied by the sum of the relevant base units + the additional 15 minute time units indicated on the claim.
- For multiple procedures or if the service is provided by a CRNA, the amount above is cut in half
- Applicable deductible is then subtracted and the remaining amount is adjusted for coinsurance.

Formula

For HCPCs that can be matched to fee schedule

Standardized payment =

$$\left\{\left[\text{conversion factor X}\left(\text{base units} + \frac{\text{Units}}{10^4}\right)\text{X .5 (multiple procedure or CRNA adjustment, if applicable)}\right] - \textit{deductible}\right\} \times (1 - \text{coinsurance rate})$$

[4] For 2010 and forward, units are used as they appear on the claim. In 2007 and 2008, it appeared that units needed to be divided by 10.

Where coinsurance rate =

$$\frac{\textit{coinsurance amount on the claim line}}{\textit{allowed charge indicated on the claim line} - \textit{applicable deductible}}$$

For HCPCs that cannot be matched to fee schedule

Standardized payment = actual payment

Sources

- anesthesia conversion factor taken from the relevant year's regulation.
- Applicable base units taken from CMS table for the relevant year
- Unit count provided on the claim = `CARR_LINE_MTUS_CNT`
- For Multiple procedures `Modifier_Cd` = QK
- For CRNA procedures `Modifier_Cd` = QX or QY
- Applicable deductible is `LINE_BENE_PTB_DDCTBL_AMT`
- Coinsurance amount on the claim is `LINE_COINSRNC_AMT`
- Allowed charge indicated on the claim is `LINE_ALOWD_CHRG_AMT`

Comments

- In the CCW, anesthesia units are reported without a decimal point although the last digit is tenths of a unit. By dividing by ten, we use the correct units amount. This did not appear to be necessary in 2010 or 2011.

2) All other Physician services

Description

- In general, the standardized amount is built up from the conversion factor multiplied by the sum of the (the relevant work RVUs * Adjuster (if applicable in year)) + transitioned practice expense RVUs + malpractice RVUs).
- Some HCPCs are subject to special rule as indicated by a special column on the physician fee schedule file
    - The Diagnostic Imaging Family Indicator column creates 11 "families" of imaging codes prior to 2011 and only 1 family in 2011. In the case of multiple claims lines for imaging in the same family on the same claim, the highest paid line item is unaffected while the technical component of all other line items is multiplied by .75 (for services furnished on or after 7/1/10, .5). In making this determination for a global code (no TC modifier), the comparison would be made to the TC of the global. If a TC of a global service wasn't the largest value among the TCs, it would be multiplied by .75

rather than the global amount (for services furnished on or after 7/1/10, .5); the professional portion of the global would remain unchanged.

- The Bilateral Surgery column indicates whether a code is subject to the reduction for bilateral surgery. For a code with a value of "1", in the presence of modifier "50" payments are multiplied by 1.5. For two of the same code with a value of "1", in the presence of RT & LT modifiers each payment is multiplied by .75.
- The Endo Base column, in combination with the Multiple Procedures column, creates 31 "families" of endoscopic procedure codes. In the case of multiple claims lines for endoscopic procedures in the same family on the same claim, the highest paid line item is unaffected while the payment amount for all other line items is reduced by the value of the base procedure. In making this comparison, bilateral endoscopic procedures are treated as a single procedure at the reduced payment amount. If a bilateral endoscopic procedure is reduced, it is reduced by 150% of the value of the base procedure.
- The multiple procedures column indicates whether a code is subject to the reduction for multiple procedures or therapy services.
    - For codes with a value of "2" or "3", in the presence of modifier "51" payments are multiplied by .5.
    - In 2011, on non-institutional claims for multiple codes with a multiple procedures value of "5", all practice expense RVUs except for the most expensive service are multiplied by .8
    - In 2011, on institutional Part B claims for multiple revenue center lines with **both** revenue codes 042x, 043x or 44x and HCPCs with a multiple procedure value of "5", all practice expense RVUs except for the most expensive service are multiplied by .75.
- The Co-surgery column indicates whether a code is subject to the reduction for co-surgery. For codes with a value of "1" or "2", in the presence of modifier "62" payments are multiplied by .625.
- The Assistant at Surgery column indicates whether a code is subject to the reduction for assistants at surgery. For codes with a value of "0" or "2", in the presence of a type of service code 8 (assistant as surgery) payments are multiplied by .16.
- If there is a "C" in the Status Code column, the service is priced by our contractor and there are no national fee schedule values. For these services, the standardized payment is equal to the actual payment.

- The above amount is also adjusted in the case of physicians sharing a global fee or if provided by PAs, NPs, CNS, Registered Dietitian/Nutritionists, Certified Nurse Midwives or, CSWs.
- Applicable deductible is then subtracted and the remaining amount is adjusted for coinsurance.

Formula

For Claim lines with HCPCs/modifier combination that can be matched to the physician fees schedule and which do not have a "C" Status Code or where the physician fee schedule payment amount is greater than zero..

Initial Allowed Standardized payment =

$$Conversion\ factor\ \times (Work\ RVUs^{5} + Transitioned\ Practice\ Expense\ RVUs + Malpractice\ RVUs)$$

The initial allowed standardized payment is adjusted to produce an adjusted allowed standardized amount as follows:

- In the case of multiple claims line for imaging in the same family on the same claim, the highest TC component is unaffected. For all other line items:
    - If for the technical component, line items is multiplied by .75 (for services furnished on or after 7/1/10, .5)
    - If for global fee, the technical component of that global fee is multiplied by .75 (for services furnished on or after 7/1/10, .5) – the professional component is not affected.
- In the case of claims lines for HCPC subject to the bilateral surgery reduction policy line items are either multiplied by .75 (2 of the same code with RT & LT modifiers) or by 1.5 (1 code with 50 modifier).
- In the case of multiple claims line for endoscopic procedure in the same family on the same claim, the highest paid line item is unaffected while the payment amount for all other line items is reduced by the value of the base procedure (resulting value cannot be negative). In making this comparison, bilateral endoscopic procedures are treated as a single procedure at the reduced payment amount. If a bilateral endoscopic procedure is reduced, it is reduced by 150% of the value of the base procedure.
- In the case of claims lines for HCPC subject to the multiple procedures reduction policy all line items are multiplied by .5.
- In the case of claims lines for HCPC subject to the co-surgery reduction policy all line items are multiplied by .625.
- In the case of claims lines for HCPC subject to the assistants at surgery reduction policy all line items are multiplied by .16.
- In the case of physicians sharing a global fee the payment amount is multiplied by the applicable percentage the HCPC according to the modifier on the claim.
- In the case of services provided by PA, NP, CNS, RD/N, all line items are multiplied by .85.
- In the case of services provided by CSW, all line items are multiplied by .75.
- In the case of services provided by Midwife, all line items are multiplied by .65.
- Starting in 2011, in the case of multiple claims line for therapy services on the same claim, the highest paid line item in term of practice expense is unaffected while the practice expense

[5] *Adjuster to work RVUs:* 2007 - 0.8994; 2008 - 0.8806; 2009 – 2011 – no adjustment

for all other line items is multiplied by .8 (non-institutional claim) or .75 (institutional Part B claims).

The final step in the calculation is to account for number of units and for cost-sharing:

$$Standardized\ payment =$$

$$[(Adjusted\ allowed\ standardized\ amount \times Units^{6}) - Deductible] \times (1 - coinsurance\ rate)$$

$$Where\ coinsurance\ rate =$$

$$\frac{coinsurance\ amount\ on\ the\ claim\ line}{allowed\ charge\ indicated\ on\ the\ claim\ line - \ applicable\ deductible}$$

For Claim lines with HCPCs/modifier combination that cannot be matched to the physician fees schedule or which have a "C" Status Code or where the physician fee schedule payment amount is zero.

The standardized amount equals the actual claim line payment amount.

Sources

- Conversion factors are taken from the relevant year's physician fee schedule file.
- RVUs determined from the physician fee schedule file based on the combination of claim line HCPC and MOD. Modifiers include:
  - 53 – discontinued procedure
  - 26 – professional component
  - TC – technical component

  However, for the TC of imaging services including the TC of a global service, the RVUs used are the lower of those in the physician fee schedule or OPD fee schedule values converted to physician RVUs. These OPD "RVUs" are in columns of the physician fee schedule file ("Non-facility PE used for OPPS payment amount", "Facility PE used for OPPS payment amount" and "MP used for OPPS payment amount"). If the HCPC on the claim cannot be matched to the physician fee schedule, the actual amount on the claim line is used as the standardized amount.
- The facility value of the practice expense RVUs is used if `LINE_PLACE_OF_SRVC_CD` equals:
  - 21 - Inpatient Hospital
  - 22 - Outpatient Hospital
  - 23 - Emergency Room-Hospital
  - 24 - Ambulatory Surgical Center

[6] Units are not applied in the presence of modifiers that indicate physicians are sharing a global fee.

    - 26 - Military Treatment Facility
    - 31 - Skilled Nursing Facility
    - 34 - Hospice
    - 41 - Ambulance—Land
    - 42 - Ambulance—Air or Water
    - 51 - Inpatient Psychiatric Facility
    - 52 - Psychiatric Facility-Partial Hospitalization
    - 53 - Community Mental Health Center
    - 56 - Psychiatric Residential Treatment Center
    - 61 - Comprehensive Inpatient Rehabilitation Facility
- To determine the HCPCs subject to the imaging families reduction, we look to the Diagnostic Imaging Family Indicator column on the physician fee schedule file. There are 11 imaging "families" as indicated by codes "1" through "11" in that column prior to 2011 and only 1 family in 2011.
- To determine the whether a line item is subject to the bilateral surgery reduction, we look for HCPCs with a "1" in the bilateral surgery (bilat surg) column on the physician fee schedule file and either `Modifier_Cd` = 50 on a single line or `Modifier_Cd` = LT & RT on two lines with the same code..
- To determine the HCPCs subject to the multiple related endoscopic procedure reduction, we look for a "3" in the Multiple Procedures (mult proc) column of the physician fee schedule. Families are determined based on identical HCPCs in the Endo Base column. There are 31 "families". The reduction amount is equal to the value of the HCPC in the ENDO Base column (or 150% in the case of a bilateral endoscopic procedure).
- To determine the HCPCs subject to the multiple procedure reduction, we look for a "2" or "3" in the Multiple Procedures (mult proc) column of the physician fee schedule and `Modifier_Cd` = 51.

- To determine the whether a line item is subject to the assistant at surgery reduction, we look for HCPCs with a "0" or "2" in the assistant at surgery (asst surg) column on the physician fee schedule file and type of service code 8 `line_cms_type_srvc_cd` (assistant at surgery).
- To determine the whether a line item is subject to the co-surgery reduction, we look for HCPCs with a "1" or "2" in the co-surgery (co-surg) column on the physician fee schedule file and a `Modifier_Cd` = 62.
- The presence of `Modifier_Cd` = 56, 54 or 55 indicate that the physician is sharing a global fee. The factor to be applied to the payment amount for the HCPC comes from one of three columns in the physician fee schedule file.
    - For 56 the Pre Op column is used
    - For 54 the Intra Op column is used
    - For 55 the Post Op column is used
- For PAs - `PRVDR_SPCLTY_CD` equals 97
- For NPs - `PRVDR_SPCLTY_CD` equals 50

- For CNS - PRVDR_SPCLTY_CD equals 89
- Registered Dietitian/Nutritionists - PRVDR_SPCLTY_CD equals 71
- Certified Nurse Midwives - PRVDR_SPCLTY_CD equals 42
- CSW - PRVDR_SPCLTY_CD equals 80
- To determine the HCPCs subject to the multiple therapy services reduction, we look for a "5" in the Multiple Procedures (mult proc) column of the physician fee schedule.
- Units is found in the SRVC_CNT.
- Applicable deductible is LINE_BENE_PTB_DDCTBL_AMT
- Coinsurance amount on the claim is LINE_COINSRNC_AMT
- Allowed charge indicated on the claim is LINE_ALOWD_CHRG_AMT

Comments

- Physicians in health professional shortage areas (HPSAs) receive a 10% bonus on Medicare portion of payment. These bonuses are not included in the standardized amounts for the same reason that adjustments to SCH and MDH are not included.
- Non-participating physicians receive 95% of the rate for participating physicians; we do not capture this differential because it does not add to our understanding service use.
- In the previous version of standardization V.1, we overstated imaging since we did not capture: the reduction to the technical component (TC) when multiple images are taken of the same area of the body in one encounter and the payment cap to the OPD fee schedule levels.
- In the previous version of standardization V.1, we overstated physician procedures since we did not fully reflect the reduction made for multiple procedures. In addition, we did not reflect the reductions made for: bilateral procedures: multiple related endoscopic procedures; co-surgery; assistants at surgery; and physicians sharing a global fee. (For assistants at surgery, we decided to use the type of service code rather than modifier to indentify the applicable claim lines.)

	Type Service=8			
		No	Yes	Total
MOD	Neither	280,718	161	280,879
	80,81,82	0	12,183	12,183
	AS	1	81,201	81,202
	Total	280,719	93,545	374,264

- In the previous version of standardization, we had not been accounting for multiple services based on use of the unit count.

- In the previous version of standardization we had been reflecting the use of the facility practice expense in certain settings based on the use of place of service code, but not in all the settings to which the policy was applicable.

Ambulatory Surgical Center

Claims included

All Part B non-institutional claims with CARR_LINE_TYPE_SRVC_CD = F

Description

- The standardized amount is generally equal to ASC fee schedule amount relevant to the service provided.
- In the case of multiple procedures, and reduced or discontinued procedures, we follow the payment rule and reduce the standardized amount by ½.
- Applicable deductible is then subtracted and the remaining amount is adjusted for coinsurance.

Formula

$$Standardized\ payment =$$

$$[(ASC\ fee\ schedule\ amount \times Units\ \times Adjustment\ factor, if\ applicable) -\ deductible] \times (1 - coinsurance\ rate)$$

Where adjustment factor = .5, if the status or modifier code indicates multiple procedures, or reduced or discontinued procedures

Where coinsurance rate =

$$\frac{coinsurance\ amount\ on\ the\ claim\ line}{allowed\ charge\ indicated\ on\ the\ claim\ line\ -\ applicable\ deductible}$$

Sources

- The fee schedule amount is determined by the procedure on the claim line (HCPCS_CD)
- Multiple services are indicated by Modifier_Cd equals 51
- Reduced procedures are indicated by Modifier_Cd equals 52
- Discontinued procedures are indicated by Modifier_Cd equals 73
- Units are from line_srvc_cnt.
- Applicable deductible is LINE_BENE_PTB_DDCTBL_AMT
- Coinsurance amount on the claim is LINE_COINSRNC_AMT
- Allowed charge indicated on the claim is LINE_ALOWD_CHRG_AMT

Durable Medical Equipment

Claims included

All Part B non-institutional claims with

- `BETOS_CD` equal to D1A, D1B, D1C, D1D, D1E or D1F; and
- `CATG` column from the DMEPOS fee schedule for the HCPCs furnished does not equal PO or TS

In general – standardization method for DME depends on the modifier used along with the HCPCs on the claim line.

Specifically

- If modifiers RP or RB are used on the claim the standardized amount is the actual claim payment amount.
- In all other cases, the methodology described below is used.

Description

- The standardized amount is equal to the ceiling of the DME fee schedule relevant to the service provided as indicated by the combination of HCPC and modifier.
- Applicable deductible is then subtracted and the remaining amount is adjusted for coinsurance.

Formula

$$Standardized\ payment =$$

$$[(DME\ fee\ schedule\ ceiling\ amount \times Adjustment\ factor, if\ applicable \times Units, if\ applicable) - deductible]$$

$$\times (1 - coinsurance\ rate)$$

$$Where\ coinsurance\ rate =$$

$$\frac{coinsurance\ amount\ on\ the\ claim\ line}{allowed\ charge\ indicated\ on\ the\ claim\ line - applicable\ deductible}$$

Adjustment Factors

Time Period Applicable	Type of Products	Modifier Required	Modifier Value Used	Adjustment Factor

Prior to 2011	Power wheel-chairs	NU (purchase option)	Value for RR	10
		UE (used purchase)	Value for RR	7.5
	All DME	KJ with RR	Value for RR	.75
On or after 1/1/11	Power wheel-chairs	NU (purchase option)	Value for RR	6.67
		UE (used purchase)	Value for RR	5
		KJ with RR	Value for RR	.4
	All other DME	KJ with RR	Value for RR	.75

Sources

- The ceiling value is determined by combination of the HCPCs and modifier on the claim line
  - HCPCs comes from HCPCS_CD
  - MODs come from HCPCS_1st_MDFR_CD and HCPCS_2nd_MDFR_CD
    - Modifiers that affect payment:
      - If HCPCS_1ST_MDFR_CD equals AU, AV, AW, KF, KL, KM, KN, NU, RR or UE; or
      - If HCPCS_2ND_MDFR_CD equals BA, KE, KC, KL or KF
      - Modifiers KH, KI, KJ or MS should be treated as RR
      - Any other modifiers found on the claims should be ignored.
      - When the FS shows one code as 1st modifier and another as the 2nd modifier claims should be treated the same if the order of the modifiers is reversed (eg. For E0748 a claim with mod 1=KF and mod 2=NU is treated as if mod 1=NU and Mod 2=KF)
- Units are from line_srvc_cnt.
- Applicable deductible is LINE_BENE_PTB_DDCTBL_AMT
- Coinsurance amount on the claim is LINE_COINSRNC_AMT
- Allowed charge indicated on the claim is LINE_ALOWD_CHRG_AMT

Comments

- In our previous version of standardization, we looked to the fee schedule for a given year for the modifiers that impacted payment. To the extent that a claim line had a combination of HCPCs and modifiers for which we did not find a fee schedule amount, we put the claim line in the "Other, Other" category and used the actual paid amount as the standardized amount. We had also assumed that the placement of a modifier in first or second position as shown in the fee schedule mattered. In working on this version of standardization, we discovered that:
  - Some modifiers appear on the claim for information purposes only and should be ignored
  - That the order of the modifier in the first or second position does not have to follow what is shown in the fee schedule.

    - Certain modifiers, not shown in the fee schedule, are equivalents of modifiers that are shown in the fee schedule.
    - Old modifiers may not appear in the fee schedule but are priced and paid by contractors on a basis that cannot be obtained looking at the fee schedule
- In our previous version of standardization, we had not reflected the payment policy for the purchase of power wheel chairs or for the reduction in rental payments that occurs after the first three months.

Prosthetics, Orthotics and Surgical Supplies

Claims included

All Part B non-institutional claims with:

- BETOS_CD equal to D1A, D1B, D1C, D1D, D1E or D1F; and
- CATG column from the DMEPOS fee schedule for the HCPCs furnished equals PO or TS

Description

- The standardized amount is equal to 5/6 of ceiling of the DME fee schedule relevant to the service provided as indicated by the combination of code and modifiers.
- Applicable deductible is then subtracted and the remaining amount is adjusted for coinsurance.

Formula

$$Standardized\ payment =$$

$$[(.833 \times DME\ fee\ schedule\ amount \times Units, if\ applicable) - deductible]$$

$$\times (1 - coinsurance\ rate)$$

$$Where\ coinsurance\ rate =$$

$$\frac{coinsurance\ amount\ on\ the\ claim\ line}{allowed\ charge\ indicated\ on\ the\ claim\ line - applicable\ deductible}$$

Sources

- The ceiling value is determined by combination of the HCPCs and modifier on the claim line
  - HCPCs comes from HCPCS_CD
  - MODs come from HCPCS_1st_MDFR_CD and HCPCS_2nd_MDFR_CD
    - Modifiers that affect payment:
      - If HCPCS_1ST_MDFR_CD equals AU, AV, AW, KF, KM, KN, NU, RR or UE; or
      - If HCPCS_2ND_MDFR_CD equals KF, KC or BA
- Units are from line_srvc_cnt.
- Applicable deductible is LINE_BENE_PTB_DDCTBL_AMT
- Coinsurance amount on the claim is LINE_COINSRNC_AMT
- Allowed charge indicated on the claim is LINE_ALOWD_CHRG_AMT

PEN Claims

Claims included

All Part B non-institutional claims with `BETOS_CD` equal to O1C

Description

- The standardized amount is equal to the actual claim payment amount.
- Applicable deductible is then subtracted and the remaining amount is adjusted for coinsurance.

Formula

Standardized payment = Actual payment amount

Sources

- Actual claim amount = `line_nch_pmt_amt`

Comments

- There are no regional adjustments for PEN.
- No adjustment is made for deductible and coinsurance when the standard amount is simply the actual payment.

Part B Drugs

Claims included

All Part B non-institutional claims with `BETOS_CD` equal to D1G, O1D, O1E or O1G

Description

- The standardized amount is equal to the actual payment from the claim.

Formula

Standardized payment = Actual payment amount

Sources

- Actual claim amount = `line_nch_pmt_amt`

Comments

- In our previous version of standardization (V.1), we multiplied the applicable drug fee schedule amount X number of units to compute the allowed amount. According to CM, units reported on the claim are often not the units used by the contractor to compute payment; therefore, our standardization method could result in inaccurate amounts. Also, there is no geographic adjustment to the ASP amounts so the actual payment amount can be used as the standardized amount.

Clinical Lab Services

Claims included

All Part B non-institutional claims with `BETOS_CD` = T1* except for T1G

In general – the standardization method for clinical lab claims depends whether or not the HCPC is in BETOS group T1B (automated general profile). For other BETOS groups, it depends on whether or not the lab service has a national limit for the lab fee schedule equal to 0.

1) Claims lines with HCPCs '80047', '80048', '80051', '80053','80069', '80074', '80076' (BETOS group T1B)

Description

- The standardized amount is equal to the actual payment from the claim.

Formula

Standardized payment = Actual payment amount

Sources

- Actual claim amount = `line_nch_pmt_amt`

Comments

- In reviewing our initial standardization results for V.2, the ratio of standardized payment to actual payment for BETOS group T1B (automated general profile, lab test) was an outlier (1.28). Based on email traffic with CMM, we determined that these codes are subject to a policy automated lab tests under which payment varies based on the combination of tests billed. Given time limitation, the dollars at stake and the limitation already imposed on variation in state fee schedule, we opted to use the actual amount as the standard amount.

2) Claim lines for HCPCs with a national limit equal to 0

Description

The standardized amount is the same as the actual payment amount on the claim.

Formula

Standardized payment = Actual payment amount

Sources

- Actual claim amount = `line_nch_pmt_amt`

Comments

- There is no need to adjust since payments are uniform nationally

3) All other claim lines

Description

The standardized amount is equal to the national limit amount times the number of units adjusted for any coinsurance or deductible found on the claim

Formula

Standardized payment =

$$[(National\ Limit \times Units) - deductible] \times (1 - coinsurance\ rate)$$

Where coinsurance rate =

$$\frac{coinsurance\ amount\ on\ the\ claim\ line}{allowed\ charge\ indicated\ on\ the\ claim\ line - applicable\ deductible}$$

Sources

- The fee schedule amount is determined by claim line (`HCPCS_CD`).
- The national limit amount comes from the applicable year's fee schedule.
- Units are from `line_srvc_cnt`.
- Applicable deductible is `LINE_BENE_PTB_DDCTBL_AMT`
- Coinsurance amount on the claim is `LINE_COINSRNC_AMT`

Ambulance

Claims included

All Part B non-institutional claims with `BETOS_CD` = O1A

In general – Claim lines for mileage are treated differently from other ambulance claim lines.

- For mileage claims `HCPCS_CD` equal to A0425, A0435 or A0436
- For all other ambulance claimes `HCPCS_CD` equal to A0426, A0427, A0428, A0429, A0430, A0431, A0432, A0433, A0434

1) Claim lines for ambulance mileage

Description

- The standardized amount is the same as the actual payment amount on the claim.

Formula

$$Standardized\ payment = Actual\ payment\ amount$$

Sources

- Actual payment amount is `line_nch_pmt_amt`

2) Other ambulance claims

Description

- The standardized amount is generally equal to the arithmetic mean of the actual allowed claim line amounts for the year for the relevant HCPC.
- Applicable deductible is then subtracted and the remaining amount is adjusted for coinsurance.

Formula

$$Standardized\ payment =$$

$$[National\ mean\ of\ allowed\ amounts - deductible]$$

$$\times (1 - coinsurance\ rate)$$

$$Where\ coinsurance\ rate =$$

$$\frac{coinsurance\ amount\ on\ the\ claim}{allowed\ charge\ indicated\ on\ the\ claim\ -\ applicable\ deductible}$$

Sources

- The fee schedule amount is determined by claim line (HCPCS_CD).
- Applicable deductible is LINE_BENE_PTB_DDCTBL_AMT
- Coinsurance amount on the claim is LINE_COINSRNC_AMT
- Allowed charge indicated on the claim is LINE_ALOWD_CHRG_AMT

Comments

- For the previous version of standardization, we had been using the mean of the actual payment amounts by HCPC code for the standardized payment for the various ambulance services. We subsequently determined that it would be more appropriate to use the mean of the allowed payments since it doesn't include the deductible and coinsurance.

All Other Carrier Claims

Claims included

All Part B non-institutional claims with BETOS groups Y1 (Other Medicare FS), Y2 (Other Non-FS) or Z2 (Undefined Codes)

Description

- The standardized amount is the same as the actual payment amount on the claim.

Formula

Standardized payment = Actual payment amount

Sources

- Actual payment amount is `line_nch_pmt_amt`